

Shephard, R.J., Collins, R., Silverman, F. "Responses of Exercising Subjects to Acute "Passive" Cigarette Smoke Exposure" Environmental Research 19: 279-291, 1979.

SUMMARY: Responses to 2 hr of "passive" cigarette smoke exposure have been tested in 23 healthy young men and women who were performing intermittent bicycle ergometer work sufficient to increase respiratory minute volumes by a factor of 2.5. A simple crossover design compared data with reactions to sham exposures of similar duration. Cigarettes were smoked by a standard machine, chamber carbon monoxide concentrations were 20 (moderate dose) or 31 ppm (heavy exposure). Symptoms were much as in moderate exposures without exercise. The main complaints were of odor and eye irritation. Cough, nasal discharge or stuffiness, and throat irritation were also reported, but wheezing, shortness of breath, and tightness in the chest were both uncommon and unsupported by objective evidence of bronchospasm. A small increase of tidal volume and respiratory minute volume seemed due to anxiety rather than airway irritation. Static lung volumes were unchanged, but there were small (3-4%) decreases of FVC, FEV1.0, Vmax 50%, and Vmax25%. The changes of dynamic lung volumes were of the order anticipated from the "cigarette equivalent" encountered by the passive smoker (< 1/2 cigarette in 2 hr.).

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